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Job No.: CTCE/BBMP/W.No.12/KRIDL/GSB-1/GR/2014-15

Date : 17.02.2016

GRADATION FOR GSB-I (CLOSE GRADED)
IS: 2720 (Part 4)

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of work : Improvements to roads and drains at Industrial Area of Abbigere near segregation shed in ward No.12 of Shettyhalli Sub division, BBMP, Bangalore.

Reference : AEE/SSD/PR/QC/168/2015-16 dated: 15.02.2016

Date of Testing : 17.02.2016

Sample Source : GSB Mix Plant Bangalore.

Oven Dry Wt (gm) : 8845

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
75.0	0	0	0.00	100	100
53.0	160	160	1.81	98.19	80-100
26.50	2650	2810	31.77	68.23	55-90
9.50	1285	4095	46.30	53.70	35-65
4.75	1090	5185	58.62	41.38	25-55
2.36	1005	6190	69.98	30.02	20-40
0.425	990	7180	81.18	18.82	10-25
0.075	865	8045	90.96	9.04	3-10
PAN	800				
Total	8845				

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading I

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ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
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Date : 17.02.2016

ATTERBERG LIMITS TEST FOR GSB (CLOSE GRADED)

IS : 2720 (Part - 5)

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of work : Improvements to roads and drains at Industrial Area of Abbigere near segregation shed in ward No.12 of Shettyhalli Sub division, BBMP, Bangalore.

Reference : AEE/SSD/PR/QC/168/2015-16 dated: 15.02.2016

Date of Testing : 17.02.2016

As per MORTH Table : 400-11

Sl. No.	Particulars	Test Results	Standards as per Specifications
1	Liquid Limit, %	22.50	25.0% Maximum.
2	Plasticity Index, %	Non Plastic	6.0% Maximum.

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/Gradation/2015-16 24.02.2016

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements to roads and drains at Industrial Area of Abbigere near segregation shed in ward No.12 of Shettyhalli Sub division, BBMP, Bangalore.

Reference : AEE/SSD/PR/QC/168/2015-16 dated: 15.02.2016

Date of Testing : 24.02.2016

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **7945**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	190	190	2.4	97.6	95-100
22.4	2510	2700	34.0	66.0	60-80
11.2	1405	4105	51.7	48.3	40-60
4.75	1020	5125	64.5	35.5	25-40
2.36	990	6115	77.0	23.0	15-30
0.600	780	6895	86.8	13.2	8-22
0.075	650	7545	95.0	5.0	0-8

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/AIV/2014-15 24.02.2016

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of the Work	Improvements to roads and drains at Industrial Area of Abbigere near segregation shed in ward No.12 of Shettyhalli Sub division, BBMP, Bangalore.
Reference	AEE/SSD/PR/QC/168/2015-16 dated: 15.02.2016
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	24.02.2016

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	382	383	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	80	81	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	302	302	
4	Aggregate Impact value = percent fines	20.94	21.15	
	100* (W_2/W_1)%			21.25

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/S-T/2015-16 24.02.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
Agency	**Technical Manager (West),** KRIDL, Bangalore.
Name of Work	Improvements to roads and drains at Industrial Area of Abbigere near segregation shed in ward No.12 of Shettyhalli Sub division, BBMP, Bangalore.
Reference	AEE/SSD/PR/QC/168/2015-16 dated: 15.02.2016
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	24.02.2016

Result : Flakiness Index = **11.25%**

Elongation Index = **13.90%**

Result : Combined Flakiness & Elongation index 25.15%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

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Job No.: CTCE/W.No.12/KRIDL/CSR-03/1095h/QB/2015-16 14.03.2016

TEST REPORT ON DETERMINATION OF BITUMEN CHARACTERISTICS

***CUSTOMER**	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
***AGENCY**	:	**Technical Manager (West),** KRIDL, Bangalore.
***NAME OF THE WORK**	:	Improvements to roads and drains at Industrial Area of Abbigere near segregation shed in ward No.12 of Shettyhalli Sub division, BBMP, Bangalore.
***REFERENCE**	:	AEE/SSD/PR/QC/168/2015-16 dated: 15.02.2016
SAMPLE ID	:	Bitumen
SAMPLE RECEIVED ON	:	12.03.2016
DATE OF TESTING	:	14.03.2016

The results of the tests conducted on the bitumen sample.

Sl. No	Description	Test Method as per IS	Test Result	Requirement as per IS:73:2013
1	Penetration at 25 ^{0}C, 1/10 mm	IS :1203 -1978 (RA-2009)	68	60 to 70
2	Softening point, ^{0}C	IS :1205 -1978 (RA-2009)	48	Min. 45
3	Ductility at 27^{0}C, cm	IS :1208 -1978 (RA-2009)	100 >	Min. 50
4	Flash Point, ^{0}C	IS :1209 -1978 (RA-2009)	302	Min. 220

*Information is furnished by the Customer/Representative.

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VISHWANATH .C
Quality Manager

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14/3

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ಜಿ.ಕೆ.ವಿ.ಕೆ ಪೋಸ್ಟ್, ಗಣೇಂದ್ರನಗರ, ಬೆಂಗಳೂರು

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Job No.: CTCE/BBMP/W.No.14/KRIDL/SDBC/Bit/2014-15 16.03.2016

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AS per IRC:SP:-11-1984

CLIENT	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to roads and drains at Industrial Area of Abbigere near segregation shed in ward No.12 of Shettyhalli Sub division, BBMP, Bangalore.
REFERENCE	AEE/SSD/PR/QC/168/2015-16 dated: 15.02.2016
SAMPLE I/D	Roads in Industrial Area of Abbigere Ward No.12
DATE OF TESTING	16.03.2016

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	475	474
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25	26.00
7. Bitumen content in %	5.00	5.20
8. Average	**5.10**	

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BITUMEN CONTENT GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX
As per IS2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to roads and drains at Industrial Area of Abbigere near segregation shed in ward No.12 of Shettyhalli Sub division, BBMP,
REFERENCE	AEE/SSD/PR/QC/168/2015-16 dated: 15.02.2016
SAMPLE I/D	Roads in Industrial Area of Abbigere Ward No.12
DATE OF TESTING	16.03.2016

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	25.15	5.29	5.29	94.71	90-100
4.75	259.3	54.59	59.88	40.12	35-51
2.36	52.32	11.01	70.90	29.10	24-39
1.18	33.36	7.02	77.92	22.08	15-30
0.3	36.61	7.71	85.63	14.37	9-19
0.075	39.32	8.28	93.91	6.09	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-15 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	29.32	6.19	6.19	93.81	90-100
4.75	260.2	54.89	61.08	38.92	35-51
2.36	52.32	11.04	72.12	27.88	24-39
1.18	34.21	7.22	79.34	20.66	15-30
0.3	34.12	7.20	86.53	13.47	9-19
0.075	38.23	8.07	94.60	5.40	3-8

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